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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,914	01/03/2005	Koichi Sato	03500.017360	3004
5514 7590 03/29/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER CHEUNG, WILLIAM K	
			ART UNIT	PAPER NUMBER
			1713	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/29/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/519,914

Applicant(s)

SATO ET AL.

Examiner

William K. Cheung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 040506.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Donald et al. (US 6,306,994 B1).

The invention of claims 1-8 relates to a **block polymer** compound having at least **three block segments**, comprising:  
block segments **A, B and C arranged in succession**,  
wherein the block **segment C is most solvent attractive** while the block **segment A is most solvent repulsive**; and  
at least either one of said block segments has an **ionic group or an acidic group**.

The invention of claim 9 relates to a **block polymer** compound having at least **three block segments**, comprising:  
block segments **A, B and C arranged in succession**,  
wherein at least either one of said block segments has at least one functional group selected from the group consisting of a carboxylic acid, a carboxylic acid ester and a carboxylic acid salt, connected to the main chain via two or more atoms.

The invention of claim 10 relates to a **block polymer** compound having at least **three block segments**, comprising:  
block segments **A, B and C arranged in succession**,  
wherein the block **segment A is a hydrophobic block segment**,  
the block **segment B is a nonionic hydrophilic block segment**, and  
the block **segment C has at least one functional group selected from the group consisting of a carboxylic acid, a carboxylic acid ester and a carboxylic acid salt.**

The invention of claims 11-13 relates to a **polymer-containing** composition comprising a **block polymer compound, a solvent or a dispersion medium, and a functional material**,  
wherein said **block polymer** compound comprises block segments **A, B and C arranged in succession**,  
said block **segment C is most solvent attractive** while said block **segment A is most solvent repulsive**, and  
at least either one of said block segments has an **ionic group or an acidic group**.

The invention of claims 14-15 relates to a **method of increasing the viscosity** of a polymer-containing composition which comprises:  
a **block polymer** compound comprising block segments **A, B and C arranged in succession, a solvent or a dispersion medium, and a functional material**, wherein  
the block **segment C is most solvent attractive** while the block **segment A is most solvent repulsive**, and  
at least either one of said block segments has an **ionic group or an acidic group**,  
the method comprising a step of bringing said composition in contact with hydrogen ions or metal cations to increase the viscosity of said composition.

The invention of claims 16-18 relates to an **image forming** method comprising a step of **applying an ink onto a recording medium to conduct recording**, wherein **said ink is a polymer-containing composition** including a **block polymer compound** comprising block segments **A, B and C arranged in succession**, a **solvent or a dispersion medium**, and a **functional material**, the block segment **C is most solvent attractive** while the block segment **A is most solvent repulsive**, and at least either one of said block segments has an **ionic group or an acidic group**.

The invention of claim 19 relates to an **image forming apparatus** for conducting recording by applying an ink onto a recording medium, wherein **said ink is a polymer-containing composition** including a **block polymer compound** comprising block segments **A, B and C arranged in succession**, a **solvent or a dispersion medium**, and a **functional material**, the block segment **C is most solvent" attractive** while the block segment **A is most solvent repulsive**, and at least either one of said block segments has an **ionic group or an acidic group**.

Donald et al. (abstract) disclose block copolymer dispersants comprising a hydrophobic block and a hydrophilic block used to make aqueous dispersants such as inks. Donald et al. (col. 14, claims 1-6) disclose that the block copolymer comprising A, B, and C blocks characterized by having the hydrophobic block is interposed between the hydrophilic block and the tuning block. Donald et al. (col. 3, line 60 to col. 5, line 59; col. 14, claims 2-4) disclose the type of monomers (which include the use of carboxyl groups and vinyl ether structure) suitable to be used as hydrophilic, or hydrophobic monomer. Although Donald et al. do not explicitly state that the C block is the most solvent attractive while the A block is the most solvent repulsive (or C block is the most hydrophilic while A block is the most hydrophobic), Donald et al. (col. 5, line 52-56) clearly disclose that the tuning block of the triblock copolymer of Donald et al. can be either hydrophobic or hydrophilic. Therefore, in view of the lack of solvent

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type being claimed in applicants' claims, the examiner has a reasonable basis that the triblock copolymer teachings of Donald et al. generically includes the triblock copolymers as claimed.

Regarding the claimed colorant, Donald et al. (col. 13, line 5-23) disclose the use of black pigments.

Regarding the claimed imaging method and apparatus, Donald et al. (col. 13, line 50-59) clearly disclose an imaging method and apparatus comprising the use the triblock copolymer dispersants disclosed.

Further, in view of the substantially identical composition or constituents in the triblock copolymers disclosed in Donald et al. and as claimed, the examiner has a reasonable basis that the claimed "stimulus-responsive" or the "viscosity increasing method or response due to phase changes" features are inherently possessed in Donald et al. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William K. Cheung, Ph.D.

Primary Examiner

March 26, 2007

WILLIAM K. CHEUNG  
PRIMARY EXAMINER